

Simplicity[®]



OWNER'S MANUAL 57" SICKLE BAR MFR'S. NO. 707

SIMPLICITY MANUFACTURING COMPANY, INC.

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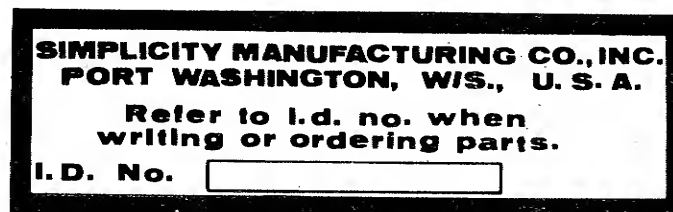
TO THE OWNER

You have made a wise choice in selecting the Simplicity 57" Sickle Bar Mower. It has been specially designed for your Simplicity tractor, and constructed to give lasting superior performance.

Before attempting to operate the sickle bar mower, study this manual and the manual for your tractor thoroughly. Pay special attention to the safety rules in this manual, as well as the tractor owners manual. Your Simplicity equipment is designed with your safety in mind, but it is up to you to be an alert, safety conscious operator. Be sure anyone else who may operate the mower is familiar with the operation and safety instructions.

Your Simplicity equipment requires a minimum of care. Following the maintenance instructions carefully will assure you of maximum satisfactory service. Thank you for taking the time to read this manual. The time spent will pay big dividends in the extra time saving performance you receive from your Simplicity Sickle Bar Mower.

When ordering replacement parts for the mower, be prepared to give your Simplicity dealer the identification number found on the identification plate shown below. It is located on the frame assembly of the mower (Figure 7, Item E). We suggest that you locate the number and record it below for easy reference.



IDENTIFICATION PLATE

SIMPLICITY NEW EQUIPMENT WARRANTY

The Company warrants Simplicity products to be free from defects in material and workmanship, except the Company makes no warranty, express or implied, with respect to tires, engines, generators and voltage regulators, which are warranted by their respective manufacturers. Any part covered by this warranty which is proven defective within one year (6 months for equipment used for rental, municipal or commercial purposes) under normal use, from date of purchase, will be replaced without charge, provided such part is returned to the factory, (if requested), and is found to be defective upon examination at the factory. This warranty does not apply to any Simplicity products altered outside of the Simplicity factory. **THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, PERFORMANCE, OR OTHERWISE.** The Company's obligation under its warranty is strictly and exclusively limited to the replacement of such parts, and in no event shall the Company be liable for any other damages, whether direct, immediate, incidental, special, or consequential. Simplicity Manufacturing Company, Inc., reserves the right to modify or change specifications without prior notification. There are no warranties which extend beyond the description of any Simplicity product.

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SAFETY PRECAUTIONS TO PROTECT YOURSELF AND OTHERS

Read and become familiar with the owner's manual for your tractor and the sickle bar mower before operating the mower.

Do not allow anyone to use the mower unless they have been instructed in how to operate it safely.

Never attempt to adjust, repair, or service the mower while the tractor engine is running.

Do not allow others near the mower while it is operating.

Stay clear of all mower drive belts and pulleys when the tractor engine is running.

Be sure the sickle bar has stopped turning before attempting to adjust, repair, or service the mower.

CAUTION: THE SICKLE BAR MAY CONTINUE TO OPERATE A FEW SECONDS AFTER THE CLUTCH HAS

BEEN DISENGAGED, AND THE ENGINE IS SHUT OFF.

Mark clearly or remove from the area to be mowed any objects which might be caught in, or be struck by the sickle bar.

Disengage power to the mower, and stop the engine before leaving the operator's position.

Operate the mower only in daylight, or good artificial light.

Be especially careful when working around the cutter bar. The cutting edges are very sharp, and can cause injury.

Use caution when operating on a sloping surface.

To prevent the operator from being struck by the divider board, always lock it in the forward position before raising the sickle bar above 45° for transport.

MFG. NO. 707 57" SICKLE BAR MOWER

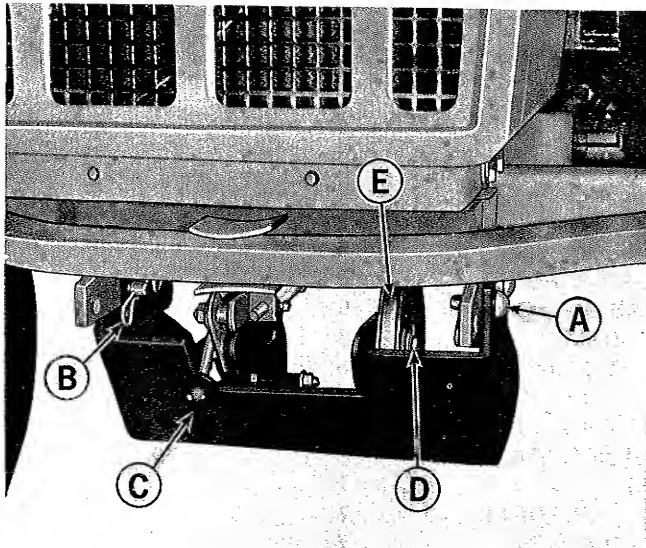


Figure 1. Installing the hitch for mid-mounted attachments.

REQUIRED ACCESSORIES AND OPTIONS

Hitch assembly for Mid-Mounted Attachment

RECOMMENDED ACCESSORIES AND OPTIONS

Rear wheel weights give added traction and stability when operating on slopes. Rear agricultural or high flotation tires give better traction and allow sharper turns than turf tires.

INSTALLATION

1. See figure 1. Use four pins (A) and spring clips (B) to mount the hitch for mid-mounted attachments as shown.
2. See figure 2. The left lift cable is shown in its storage position. Remove the spring clip and pin at (A) and use them to attach the cable to the rocker arm assembly as shown at item (A) in figure 4.
3. See figure 3. The right lift cable is shown as it should be stored, when not in use. See your Simplicity dealer for in-

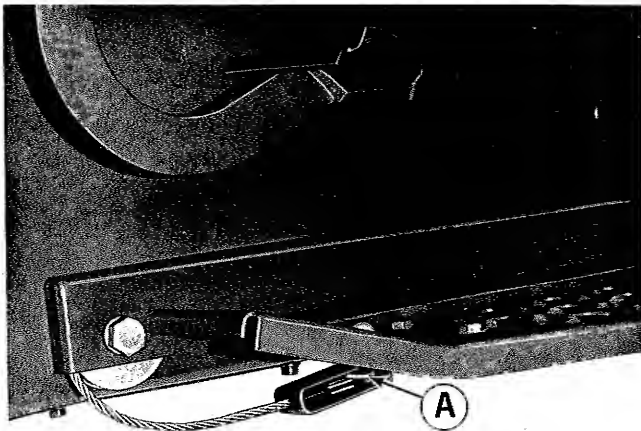


Figure 2. The left lift cable fastened in its storage position.

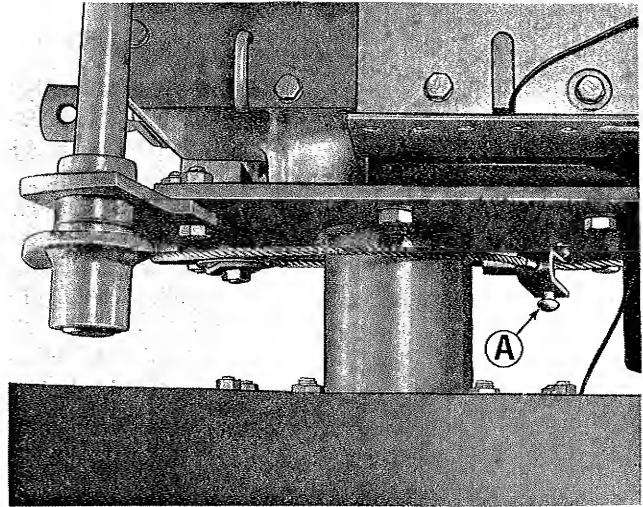


Figure 3. The right lift cable fastened in its storage position.

structions if this longer, heavier cable has not been installed on your tractor. Remove the spring clip and pin at (A) and use them to fasten the lift cable to the rocker arm assembly at (B) in figure 4.

4. See figure 5. Slide the mower under the tractor from the right side and position it as shown. **CAUTION: BE CAREFUL WHEN HANDLING THE MOWER NOT TO TOUCH THE BLADES OR GUARDS AS THEY ARE VERY SHARP.**

5. See figure 6. The lift cable should be fully extended as shown in figure 6. If it is not extended as shown, start the engine and move the hydraulic control lever forward to lower the cable fully. **CAUTION: DO NOT OPERATE THE TRACTOR ENGINE UNLESS YOU ARE IN THE OPERATOR'S POSITION ON THE TRACTOR AND SHUT IT OFF BEFORE LEAVING THE TRACTOR SEAT.** Raise the left end of the mower slightly, and attach the left lift cable at (A) as shown using the pin and spring clip furnished with the sickle bar mower. This can be done most easily by placing

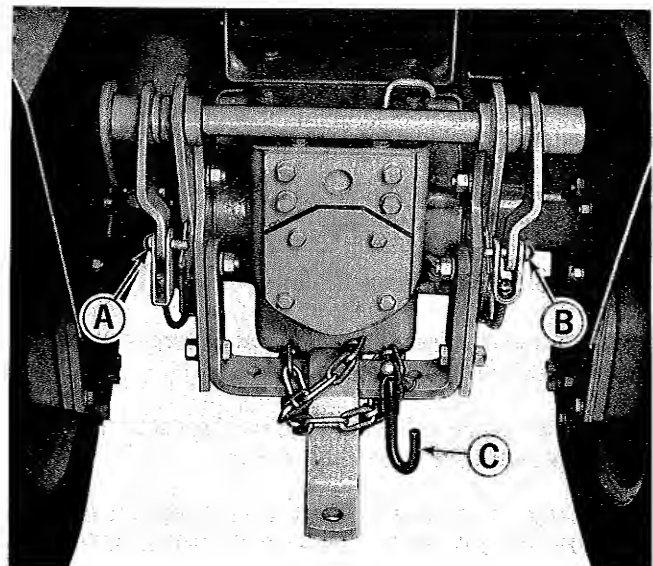


Figure 4. Lift cables attached to rocker arm assembly.

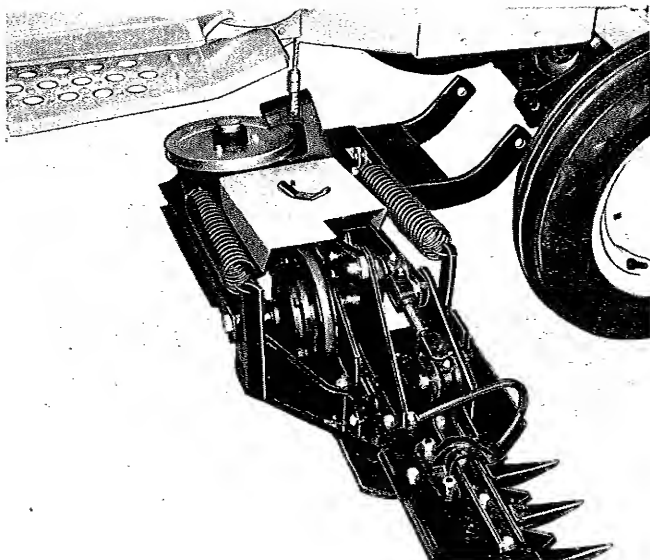


Figure 5. The mower in position under the tractor.

a block (B) approximately 4" high under the left end of the sickle bar to hold it up while the cable is being attached. Push the clip all the way through the hole in the pin.

6. See figure 7. Start the tractor engine and use the hydraulic lift lever to raise the mower so its mounting holes line up with the holes in the hitch assembly. Use two pins and spring clips at (A) to mount the mower to the hitch assembly.

7. Use the tractor hydraulic lift lever to raise the tractor lift to its highest position. Remove the block (Figure 6, Item B) from the left side of the mower and place it under the sickle bar as shown at (B) in figure 7. Lower the tractor lift system completely.

8. See figure 7. Remove wing nut (C) and cover (D) from the mower.

9. See figure 8. Remove the spring clip and pin (A) and pulley (B) from the mounting bracket. Place the right lift cable (C) under the pulley and install the pulley in place using the pin and spring clip. Extend cable (C) all the way and fasten it to the lift arms (D) using a pin and spring clip (E). The pin should be placed in the hole as far from pulley (B) as possible, so the cable is snug when the sickle bar is level. To prevent it from catching on the mower frame, pin (E) must be installed as shown with the head end toward the rear of the

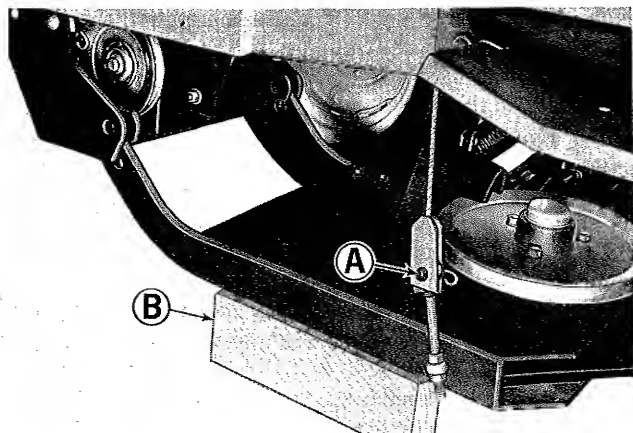


Figure 6. The left lift cable attached to the mower.

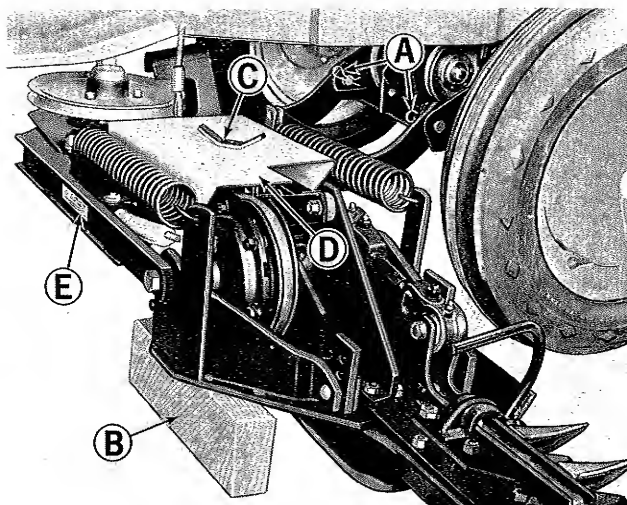


Figure 7. Mower mounted to hitch assembly.

mower. Several holes are provided to compensate for any variation in mower parts or length of the cable.

10. See figure 7. Replace cover (D) and hand tighten wing nut (C) securely.

11. See figures 9 and 10. Raise the tractor hood and feed the mower drive belt over the engine front power take off pulley and down around the idler pulleys located in the hitch assembly. Be sure the belt "V" is in the pulley grooves and twisted correctly as shown.

12. Be sure the belt tightening handle is pulled forward in the release position as shown in (Figure 1, Item C) then place the drive belt over the mower pulley.

13. See figure 11. Push the belt tightening handle (A) down and back to tighten the belt.

14. Check the distance between the set collar and rod guide as shown in figure 11. If the distance is not 1/2" to 5/8" adjust the belt tension as explained on page 7 of this manual.

15. See figure 9. Check the belt at point (A) to insure that it is at least 1/4" away from the tractor frame and battery. If it is not, adjust the left idler pulley according to the instructions on page 7 of this manual under Mower Drive Belt Tension Adjustment.

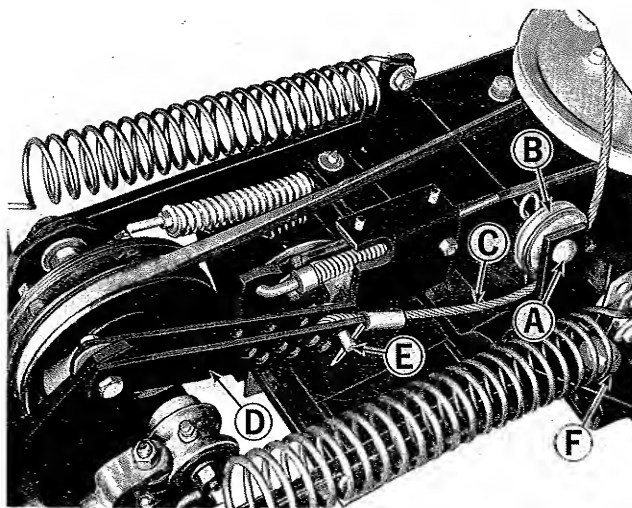


Figure 8. Right lift cable attached to mower.

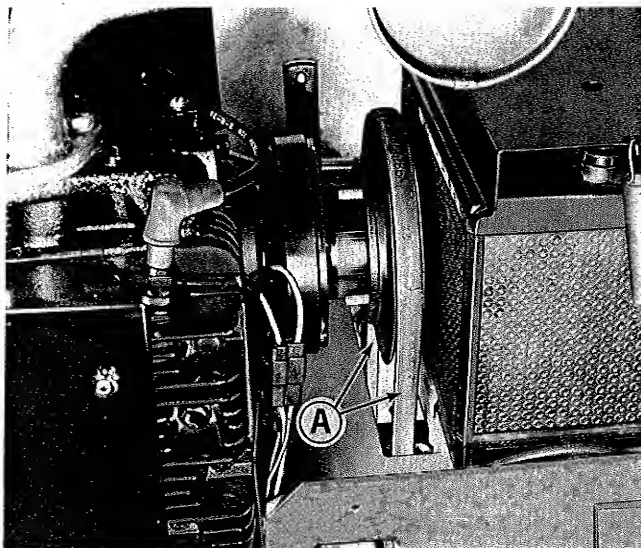


Figure 9. Mower drive belt over engine pulley.

16. See figure 12. After insuring the divider board (A) is in the transport position (Position the Divider Board on page 5) raise the cutter bar (B) and install the transport chain (C) as shown. Use a pin and spring clip at (D) to fasten the transport chain to the mower frame. Place the hook in the square tube. To help prevent the sickle bar from bouncing during transport, place the pin at (D) in the link as close to the hook as possible so the sickle bar is held near vertical. **CAUTION: WHEN RAISING THE CUTTER BAR, GRASP IT AT THE OUTER SKID SHOE, OR THE BACK OF THE CUTTER BAR. DO NOT ALLOW YOUR FINGERS TO GET BETWEEN THE CUTTING EDGES AND THE GUARD WHERE THEY COULD BE INJURED. THE KNIVES MAY MOVE AS THE SICKLE IS RAISED.**

REMOVING THE SICKLE BAR MOWER

CAUTION: BEFORE ATTEMPTING TO ADJUST SERVICE OR REMOVE THE MOWER, BE SURE THE ENGINE IS SHUT OFF, THE PARKING BRAKE SET, AND THE SICKLE KNIFE HAS STOPPED MOVING.

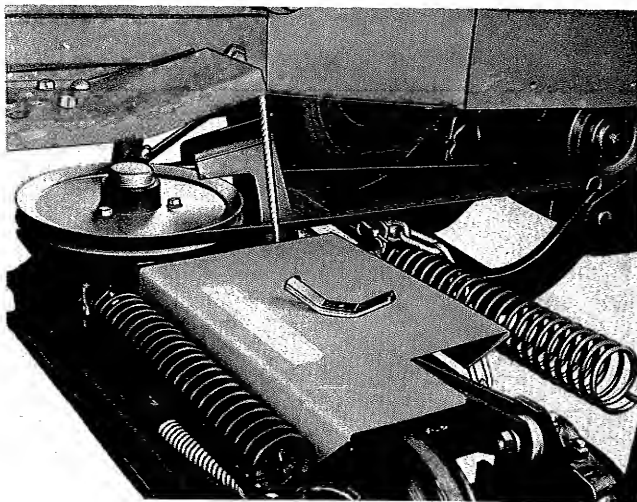


Figure 10. Mower drive belt in place.

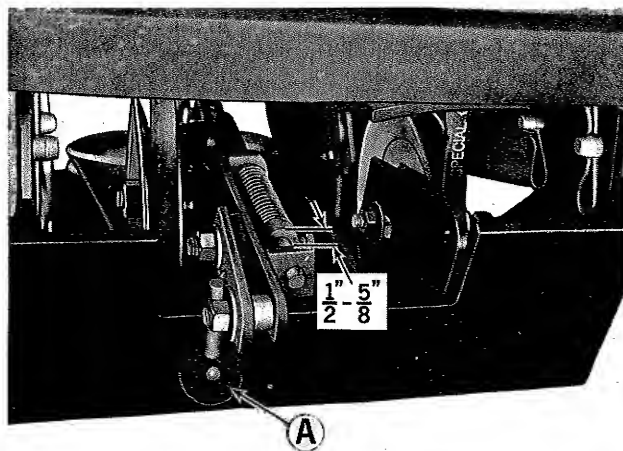


Figure 11. Mower drive belt in place and tightened.

1. Position the tractor on a level surface with enough room on the right, so the cutter bar can be lowered. Shut off the tractor engine and set the parking brake.
2. Push the tractor hydraulic control lever forward to the **FLOAT** position.
3. See figure 12. Unhook transport chain (C) and lower the cutter bar (B) to the ground.
4. See figure 11. Pull the belt tightening handle (A) forward to release the belt tension.
5. Remove the belt from the mower pulley, idler pulleys, and power take off pulley.
6. See figure 7. Use the tractor hydraulic lift lever to raise the mower. Place a block (B) under the sickle bar as shown. Place the hydraulic lift lever in the **FLOAT** position.
7. See figure 7. Remove wing nut (C) and cover (D) from the mower.
8. See figure 8. Remove the spring clip and pin at (E) and the spring clip and pin at (A) to disconnect the right lift cable from the mower. Replace the pins and spring clips in their appropriate holes and replace the cover and wing nut. (Figure 7, Items C and D).
9. Raise the tractor lift completely and remove the block (Figure 7, Item B) from under the sickle bar.
10. Using the hydraulic lift control lever, lower the mower gradually until the pins (Figure 7, Item A) are free and then remove them.
11. See figure 6. Place block (B) under the mower, then push the tractor hydraulic control lever to the **FLOAT** position. Remove the spring clip and pin at (A) to disconnect the left lift cable from the mower.
12. See figure 5. The mower is now disconnected and can be removed from beneath the tractor.
13. See figure 13. If the tractor is to be used with the 60" mid-mounted mower, the mower can be installed as shown. The brackets and pulley (A) furnished with the sickle bar are installed on the mower to compensate for the extra length cable used with the sickle bar mower. If the tractor is to be used without the mid-mounted mower complete steps 14 and 15.
14. See figure 4. Remove the spring clips and pins to disconnect the lift cables from the lift arms at (A) and (B). Use these pins and spring clips to fasten the cables in their respective storage positions as shown in figures 2 and 3.

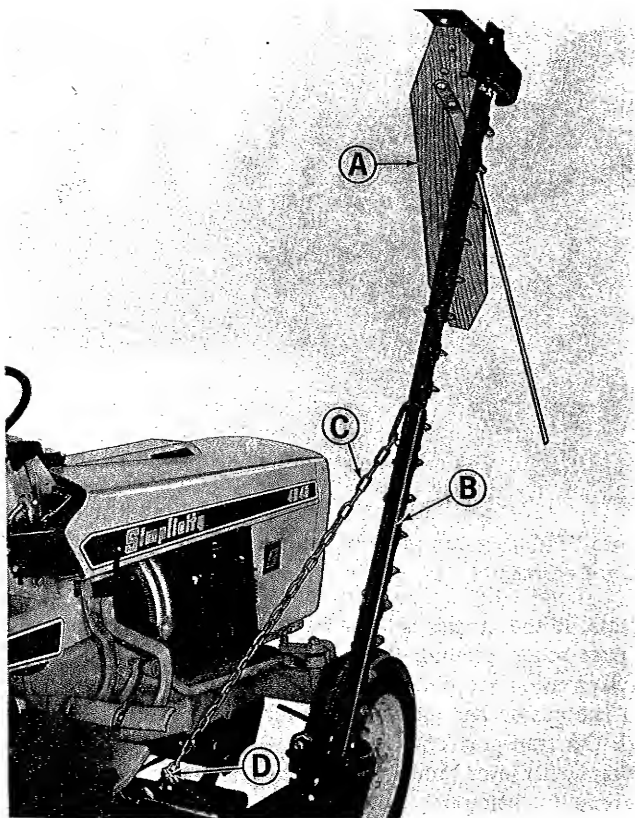


Figure 12. Sickle bar and divider board in transport position.

15. See figure 1. Remove the spring clips (B) and pins (A) and remove the hitch for mid-mounted attachments from the tractor.

OPERATION

PREPARING THE SICKLE BAR MOWER DO THE FOLLOWING:

1. Read this manual and the owners manual for the tractor carefully. Be sure you are familiar with the safety precautions, controls, and operating instructions.
2. Check the sickle bar mower carefully to be sure that it is

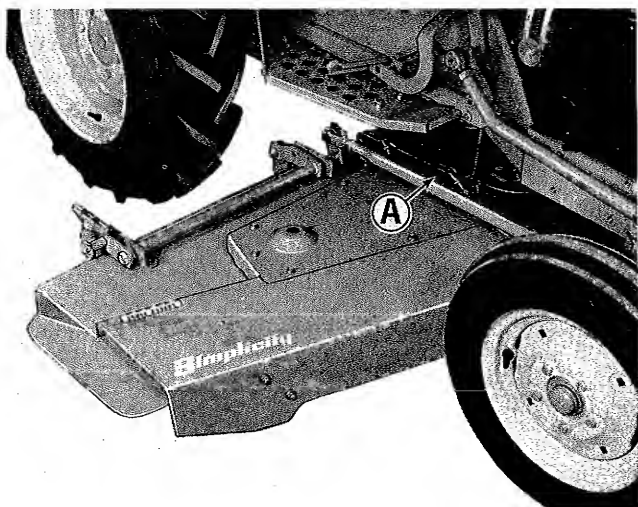


Figure 13. The 60'' mid-mounted mower attached using the longer right lift cable used with the sickle bar.

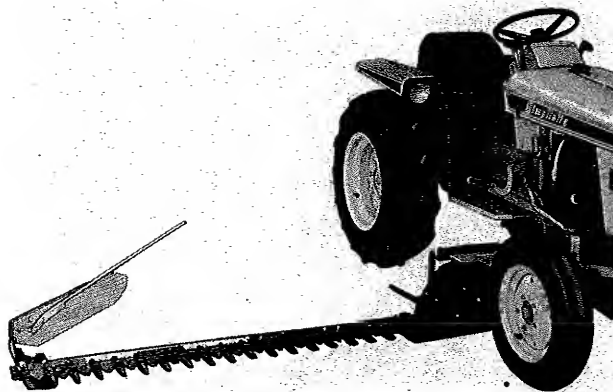


Figure 14. Mower in operating position.

properly installed. See page 2.

3. Lubricate the mower according to the maintenance instructions on page 10.

4. Remove from the area to be mowed or mark clearly any objects which may be caught or run into by the sickle bar.

LOWER THE CUTTER BAR

With the tractor engine shut off, and the parking brake set, unhook the transport chain (Figure 12, Item C) from the cutter bar and lower the cutter bar so it is supported at a 45° angle. Remove the spring clip and pin (Figure 12, Item D) and remove the transport chain from the mower. To prevent the transport chain from being caught in the cutter bar, or the mower drive it should be stored away from the mower. It can be wrapped around the draw bar as shown in Figure 4, Item C and the pin and spring clip used to hold it in place. Push the hydraulic lift control lever forward to the FLOAT position to lower the cutter bar to the operating position as shown in figure 14.

POSITION THE DIVIDER BOARD

See figure 15. Remove the spring clip and pin at (A) and

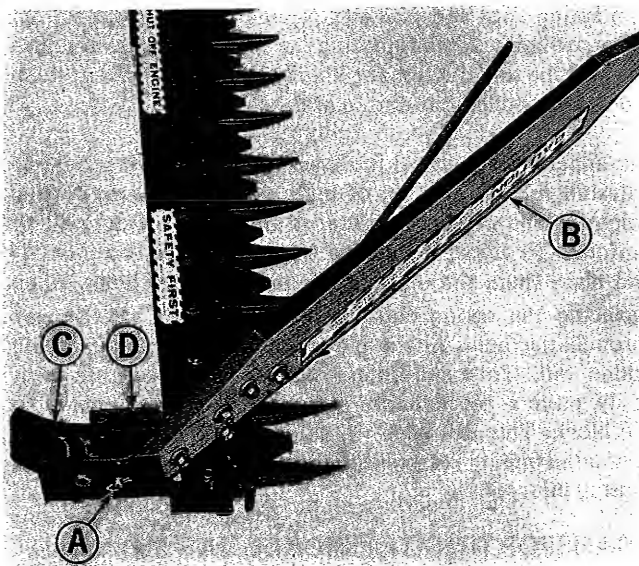


Figure 15. Divider board in transport position and skid shoe positioned to give lowest cutting height.

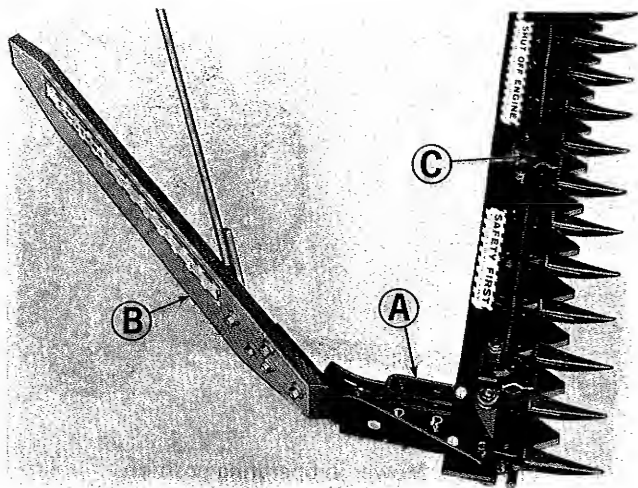


Figure 16. Divider board in operating position and skid shoe set for medium cutting height.

lift the divider board (B) back to position as shown in figure 16. The pin and spring clip removed should not be stored in the divider board assembly where they may collect grass, but should be stored with the transport chain. The pin may be placed through a link and the spring clip used to hold it in place and prevent it from being lost.

ADJUST CUTTING HEIGHT SKIDS

The two height adjusting skids, located at either end of the cutter bar assembly can be adjusted to give three cutting heights, approximately 2-3/4", 3-1/2", and 4-1/4". Figure 15 shows the outer skid shoe (C) adjusted to give the lowest cutting position. Notice that the skid shoe is turned so that the U portion (D) of the bracket is facing forward. The skid shoe should be turned in this manner when used in the low cutting position. Figure 16 shows the skid shoe adjusted to give the medium cut height. Notice that the U portion (A) of the skid shoe is toward the rear. It should be positioned in this manner when the skid shoe is adjusted for the medium and high cut. The skid shoe is adjusted by removing the two spring clips and pins and placing them through the appropriate holes. When replacing the spring clips, always push them all the way through the hole in the pin to prevent them from being pulled out during use.

The inner skid shoe (G) is shown in figure 17. It should be adjusted in the same set of holes to give the same cutting height as the outer skid shoe, so the height of cut will be uniform. To adjust it, remove the spring clips and pins (A) and place them through the appropriate set of holes. When replacing the spring clips, always push them all the way through the holes in the pins to prevent them from being pulled out. To make adjustment of the skid shoes most easily, place a block under the sickle bar, then lower it to the block. This will keep the skid shoes off the ground for easy adjustment, yet prevent the sickle bar from falling and causing injury.

TRANSPORTING THE SICKLE BAR MOWER

The sickle bar mower may be transported short distances, such as across a field, with the cutter bar raised at an angle as shown in figure 18 by using the tractor hydraulic lift

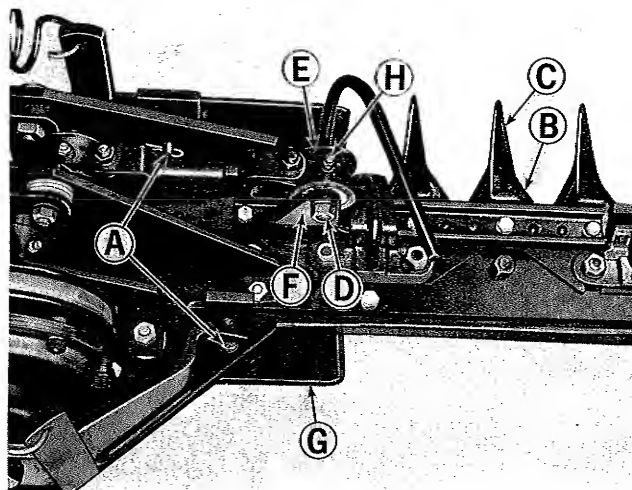


Figure 17. Sickle bar sections lined up when section adjustment is correct.

system. If the mower is to be transported greater distances, or over rough ground, the divider board should be locked forward using the pin and spring clip (Figure 15, Item A), and the cutter bar raised to the vertical position and held with the transport chain (Figure 12, Item C). The tractor hydraulic lift lever should be pulled back to raise the mower anytime it is being transported.

Any combination of the three range transmission, hydrostatic transmission control lever, and the engine speed control may be used in transporting the sickle bar mower. Ground speed should be adjusted according to the type and condition of the ground surface. **CAUTION: REDUCE SPEED OVER ANY AREAS WHICH ARE ROUGH OR WHERE THERE ARE OBSTACLES ON WHICH THE CUTTER BAR MIGHT CATCH.**

OPERATING THE TRACTOR AND SICKLE BAR SELECTING TRANSMISSION GEAR

The tractor three range transmission can be placed in second gear for most operating conditions, and the hydrostatic transmission control lever used to regulate ground speed. In large smooth fields, or when some distance must be

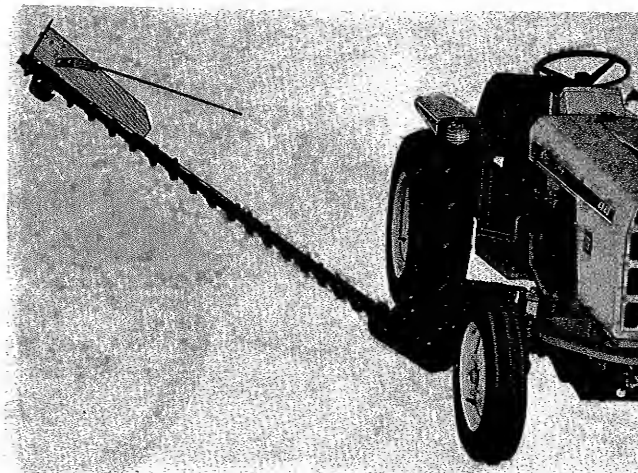


Figure 18. Mower in short distance transport position.

traveled across ends between passes, the third range may be desirable. It will allow the operator to travel faster if mowing and ground surface conditions permit, yet the tractor can be easily slowed by using the hydrostatic transmission control lever.

ENGINE SPEED SETTING

The engine should be operated at 1/2 to full speed when using the sickle bar mower. If the material to be mowed is light and the ground speed slow (less than 3 MPH), 1/2 engine speed may be enough. When cutting heavier material or when ground speed is faster, the engine must be operated at higher speeds so the sickle knives cut all the material.

CONTROLLING CUTTER BAR ANGLE

When it is desirable to raise the cutter bar to lift it over objects, or for transporting short distances, the tractor hydraulic lift lever should be pulled back to the raised position. The cutter bar can be raised to an angle of approximately 45 degrees. It is not necessary to disengage the mower drive when raising the cutter bar in this manner, for a minute or less.

ENGAGING THE MOWER DRIVE

The mower drive should only be engaged when the cutter bar is lowered to an angle of 45 degrees or closer to the ground. **DO NOT OPERATE THE MOWER WHEN IT IS IN THE VERTICAL TRANSPORT POSITION.** After the engine has been started, the mower may be engaged by pushing the front clutch switch forward to the **ON** position.

CONTROLLING GROUND SPEED

Ground speed can be easily and quickly controlled by using the tractor hydrostatic transmission control lever. The best ground speed will vary greatly with the type of terrain and the amount and type of material being cut. For most conditions, 3-4 MPH will be a good starting speed. Refer to the operation chart in the operation section of the 4040 tractor owners manual for approximate control settings to achieve these speeds. **CAUTION: BE PARTICULARLY CAREFUL AND OPERATE AT LOW GROUND SPEED ON SLOPES OR IN ANY AREA WHERE THE CUTTER BAR MAY STRIKE SOLID OBJECTS WHICH MIGHT CAUSE THE TRACTOR TO BE JARRED. GROUND SPEED CAN EASILY BE VARIED FOR MAKING TURNS, TRAVELING AROUND ENDS, AND VARYING MOWING CONDITIONS BY USING THE HYDROSTATIC SPEED CONTROL LEVER.**

CUTTER BAR BREAK-BACK RELEASE

The cutter bar is mounted to the mower frame so it can pivot or "break-back" if a solid object is struck. This mechanism helps protect the mower as well as the operator. If the cutter bar should break away while you are using it, stop the forward travel of the tractor, then disengage the mower drive by moving the **FRONT CLUTCH** switch to **OFF**. Back the tractor slowly and the cutter bar should snap back into operating position. If it does not, or if the cutter bar may have been damaged, stop the engine, set the parking brake and inspect the cutter bar. Adjustment of the break-back mechanism is explained on page 8.

MOWING PATTERN

The size and type of area to be mowed determine the best mowing pattern. Obstructions such as trees, fences, and

buildings, must also be considered. In general, when using a sickle bar mower, it is desirable to go one round counter-clockwise around the area to be mowed to mow the grass next to fences, buildings and so forth. After this first round, the remainder of the mowing should be done in a clockwise direction so that the tractor wheels do not run over the uncut area. In a rectangular area, which may be nearly square, it is usually most efficient to mow all four sides of the area. In a long narrow field it may be easier and quicker to mow only the two long sides of the field and drive along the ends with the sickle bar slightly raised.

Turning corners when using a sickle bar mower can be done either of two ways. A sharp right turn may be made at each corner so that the sickle bar swings back and immediately begins cutting the next side of the field. Making corners in this manner requires some practice and the tractor steering brakes must be used individually. See the tractor owners manual. When approaching a corner, use the hydrostatic speed control lever to slow the tractor ground speed. Turn the tractor steering wheel quickly to the right and press the right brake pedal to bring the tractor around the corner sharply. After completing the turn, return the hydrostatic speed control lever to the original position.

Since the cutter bar of the Simplicity sickle bar mower can be easily raised using the tractor hydraulic system it may often be desirable to make corners by making a tight left turn at the end of each mowing strip. As soon as the cutter bar completes cutting a strip, raise it slightly to bring it above the cut material so it does not plug the guards, and make a tight left turn of 270 degrees and bring the tractor alongside the next side of the unmowed area. Using the left wheel brake will aid in making a sharper turn. Making corners in this manner will normally be neater, and is a little easier to do than making sharp right hand turns.

ADJUSTMENTS

MOWER DRIVE BELT TENSION ADJUSTMENT

See figure 19. Tension on the mower drive belt is checked by measuring distance (A). The distance should be 1/2" to 5/8" when the belt is properly installed and the belt tightening handle (B) is pushed down and back in the tightened position. If belt tension requires adjustment, proceed as follows:

1. See figure 19. Release tension on the drive belt by pulling forward and up on the belt tightening handle (B).
2. See figure 19. Loosen the screw in set collar (C), and pull rod (D) forward so more of it is exposed to increase belt tension or push the rod back to decrease belt tension.
3. Tighten the screw in set collar (C).
4. Tighten the belt and check the belt tension distance. (Figure 19, Item A).
5. See figure 9. Check the distance at (A). There should be at least 1/4" clearance between the belt and the tractor battery and frame. If there is not, proceed as follows:
 - a. Pull the belt tightening handle (Figure 19, Item B) forward to release belt tension.
 - b. See Figure 1. Loosen capscrew (D) so idler pulley (E) can be moved forward or rearward in the slot.
 - c. Move idler pulley (E) forward or rearward as required to center the belt between the tractor frame and battery (Figure 9, Item A). Moving idler pulley (B) for-

TROUBLE SHOOTING GUIDE

PROBLEM OR SYMPTOM	POSSIBLE CAUSES	CHECKS AND CORRECTIONS
Mower cuts unevenly.	Cutter bar not lowered completely. Skid shoes not adjusted for same height.	Place tractor hydraulic lift lever in FLOAT position. Adjust skid shoes. See page 6.
Rough looking cut - or grass being pulled out by roots.	Engine speed too slow. Ground speed too fast. Knife edges dull.	Increase engine speed. Reduce ground speed. Replace sickle knives.
Cutter bar does not raise high enough (45°) using tractor hydraulic lift.	Right lift cable not in correct lift bracket hole.	Adjust lift cable. See page 3, Item 9.
Cutter bar breaks back too easily.	Ground speed too fast. Break-back latch not correctly adjusted.	Reduce ground speed. Adjust break-back latch. See page 8.
Cutter bar does not break-back when solid object is hit.	Break-back latch not lubricated. See Figure 8, Item F. Break-back latch not properly adjusted.	Lubricate latch. Adjust break-back latch. See page 8.
Sickle knife noisy or vibrates excessively.	Sickle knife wear plates badly worn. Sickle knife clips badly worn.	Replace wear plates. Replace clips.
Tractor handles poorly.	Tires not properly inflated. Traveling too fast on rough or sloping ground. Not using recommended weights.	Inflate tires according to tractor owners manual. Reduce speed. Use rear wheel weights.

ward will move the left side of the belt closer to the battery and farther from the frame, but will move the right side of the belt away from the battery and closer to the frame.

- d. See figure 1. Tighten capscrew (D) securely to prevent idler pulley (E) from moving out of adjustment. Capscrew (D) should be torqued to 50 foot pounds.
- e. Repeat steps 1 through 4 to readjust the belt tension.

SICKLE KNIFE DRIVE BELT ADJUSTMENT

See figure 20. Tension on the sickle knife drive belt is checked by measuring the length of spring (A). With the drive belt installed the spring should be 3" to 3-1/4" long. If the spring length is not within this range readjust it as follows:

1. See figure 20. Loosen the set screw in collar (B) slightly so that the set collar can be moved on rod (C).
2. Push rod (C) to the right and set collar (B) to the left to compress spring (A). When spring (A) is compressed to 3", tighten the set screw in collar (B) to hold it in place.
3. After tightening the set screw in collar (B) check the

length of spring (A) to see that it is correct. If it is not 3" to 3-1/4" in length repeat steps 1 and 2.

CUTTER BAR BREAK AWAY ADJUSTMENT

See figure 20. The cutter bar is hinged on the mower frame, so it can swing to the rear if a solid object is struck while mowing. The amount of force on the cutter bar required to operate the brake away mechanism is controlled by the length of spring (D). A good starting adjustment for spring (D) is 5" to 5-1/4". If the cutter bar breaks away too easily, such as when mowing but no solid object is struck, or does not break away easily enough, adjustment can be made as follows:

1. See figure 8. Coat the latch assembly (F) with a film of grease so it is free to slide. **CAUTION: THE LATCH ASSEMBLY MUST BE KEPT COATED WITH GREASE SO THAT IT IS FREE TO OPERATE FOR THE CUTTER BAR BREAK AWAY MECHANISM TO OPERATE EFFECTIVELY.**
2. See figure 20. To adjust the break away mechanism so the

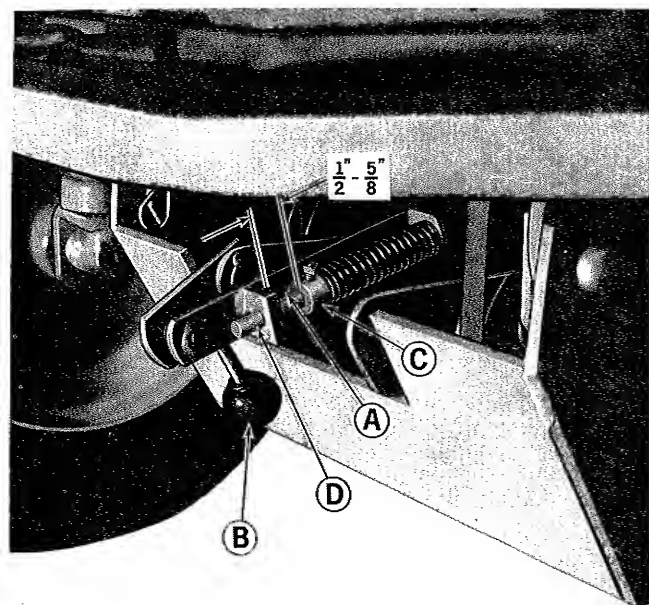


Figure 19. Belt tightening adjustment located on front hitch assembly.

cutter bar will break away more easily, turn nut (E) counter-clockwise to increase the length of spring (D). If it is desirable to adjust the break away mechanism so more force is required before it will swing back, turn nut (E) clockwise to decrease the length of spring (D). **CAUTION: DO NOT OVER TIGHTEN THE BREAK AWAY MECHANISM. NEVER TURN NUT (E) MORE THAN 2 COMPLETE TURNS CLOCKWISE WITHOUT TESTING THE CUTTER BAR TO SEE IF IT WILL STILL BREAK AWAY. THE BREAK AWAY MECHANISM MUST OPERATE TO PROVIDE OPERATOR SAFETY AS WELL AS PREVENT DAMAGE TO THE MOWER.**

SICKLE BAR REGISTER ADJUSTMENT

See figure 17. To operate most efficiently, the sickle knives (B) must center in the guard (C) as shown, when the sickle drive mechanism is turned so that the sickle knife is as far to the right as it will go. If adjustment is required, proceed as follows:

1. See figure 17. Rotate the mower drive mechanism by hand turning the drive pulley until the sickle knife is as far to the right as it will go. **CAUTION: USE CARE WHEN WORKING AROUND THE CUTTER BAR ASSEMBLY. THE KNIVES AND GUARDS ARE VERY SHARP.**
2. Remove capscrew (D) and raise bearing housing (E) out of the sickle head assembly (F). Be careful not to allow the washers on either side of the bearing housing (E) to fall out of place.
3. Move the sickle knife (B) until it is lined up as shown with the nearest guard (C).
4. Turn bearing housing (E) clockwise, or counterclockwise as required to line it up with the sickle knife head (F) so capscrew (D) can be inserted without moving either the mower drive mechanism or the sickle knife (B). **NOTE: BUSHING ASSEMBLY (E) WILL HAVE TO BE TURNED FULL REVOLUTIONS SO THAT GREASE FITTING (H) IS ON TOP WHEN IT IS REASSEMBLED.**
5. Install capscrew (D) and tighten the nut securely.

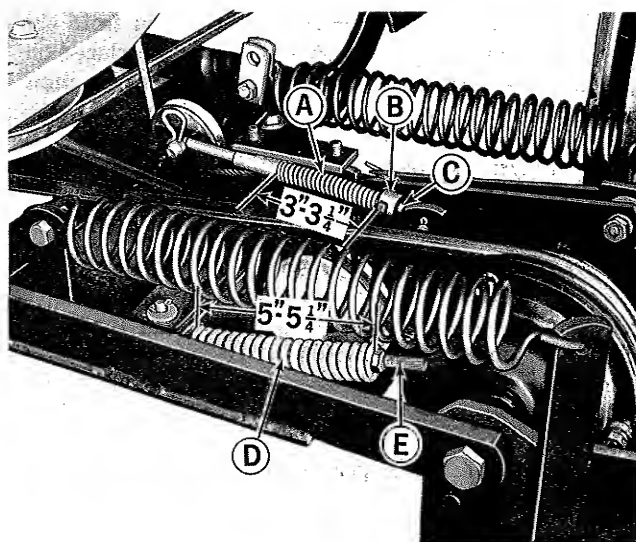


Figure 20. Sickle knife drive belt and cutter bar break away adjustments.

MAINTENANCE

ORDERING REPLACEMENT PARTS

Replacement parts required for performing maintenance services or repair work should be purchased from your Simplicity dealer. When ordering parts be prepared to give him the identification number of your sickle bar mower. If you have not already recorded this number on the inside front cover of this manual, we suggest that you do so now, for convenient future reference.

AFTER EACH USE

Inspect the sickle bar mower thoroughly, looking for any loose or missing bolts, pins, or spring clips; or worn, or damaged parts. Clean or repair the sickle bar mower as needed to insure that it is ready to use the next time you need it.

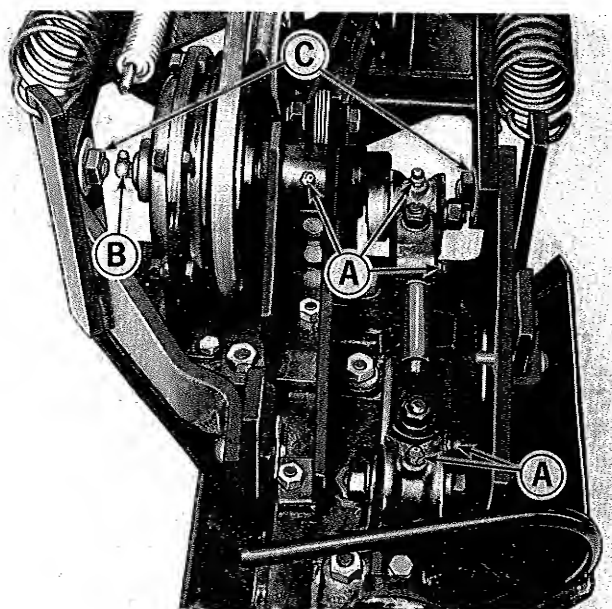


Figure 21. Cutter bar lubrication points.

AFTER EACH HOUR

To get maximum life and smoothest operation from the sickle knife, a few drops of engine oil should be placed on it and the wear plates about once each hour of operation (Figure 16, Item C).

EVERY FIVE HOURS

A multi-purpose lithium soap base grease designed to operate at high temperatures must be used in the lubrication of your sickle bar mower. This grease is available from your Simplicity dealer. See figure 21. The five grease fittings (A) should be lubricated until grease is seen forced from the bearings. Grease fitting (B) should be lubricated with about five shots or until the grease is seen forced out of the assembly, whichever occurs first.

A film of grease should be placed on the break away latch, (Figure 8, Item F).

A few drops of engine oil placed on pivot points and wear surfaces will help reduce wear. Some of the most important ones are listed below:

- Figure 1, Item A Hitch Assembly Mounting Pins
- Figure 7, Item A Mower Mounting Pins
- Figure 19, Item A Rod and Guide
- Figure 21, Item C Cutter Bar Pivot

OUT OF SERVICE PROTECTION (STORAGE)

1. Remove the sickle bar mower from the tractor. See page 4.
2. Use water under pressure and a brush to thoroughly clean the sickle bar mower of any build-up of dirt or other material.
3. Cover any area where paint has been worn or chipped away with paint or a light coat of oil.
4. Lubricate the sickle bar mower according to the every five hour maintenance service.
5. Store the mower in a dry place.

REMOVING THE SICKLE KNIFE ASSEMBLY

If it should be necessary to remove the sickle knife for re-

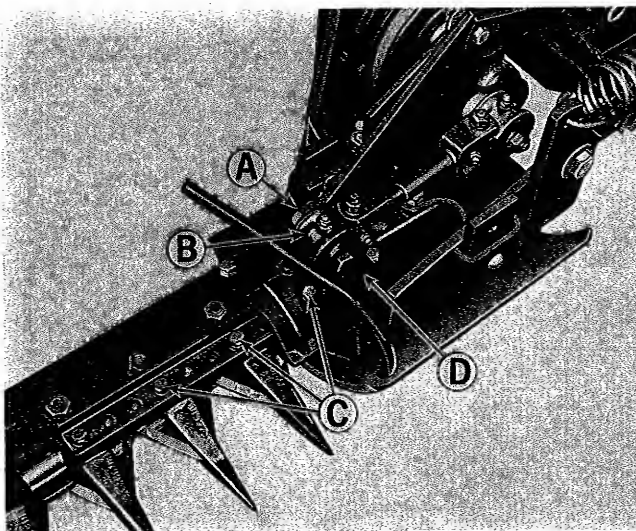


Figure 22. Removing sickle knife assembly.

placement or repair, proceed as follows:

1. See figure 22. Remove the nut, lock washer, and capscrew at (A), and lift bearing housing (B) out of the way.
2. Remove the five capscrews (C) and lift the sickle head (D) out of the way.
3. Slide the sickle knife out the right (outer end) of the cutter bar.
4. When replacing the sickle head, capscrews (C) should be torqued to 19-22 foot pounds to prevent them from coming loose. Be careful not to over tighten these capscrews as the threads may be stripped out of the sickle knife assembly.
5. Place bearing housing (B) in position between the sickle head (D).
6. Make certain that the washers are in place on each side of bearing housing (B), then install the capscrew, lock washer, and nut at (A) and tighten the nut securely. Recheck register. See page 9.

SPECIFICATIONS

Slope Mowing Angle	Up 45° - Down 30°
Effective Width	57"
Cutter Bar Mounting	Easy reset, spring loaded break-away
Pitman Bearing	Heavy duty rolling contact
Mower Drive	V-Belt from tractor front PTO
Speed Reduction	4-pinion planetary gear drive

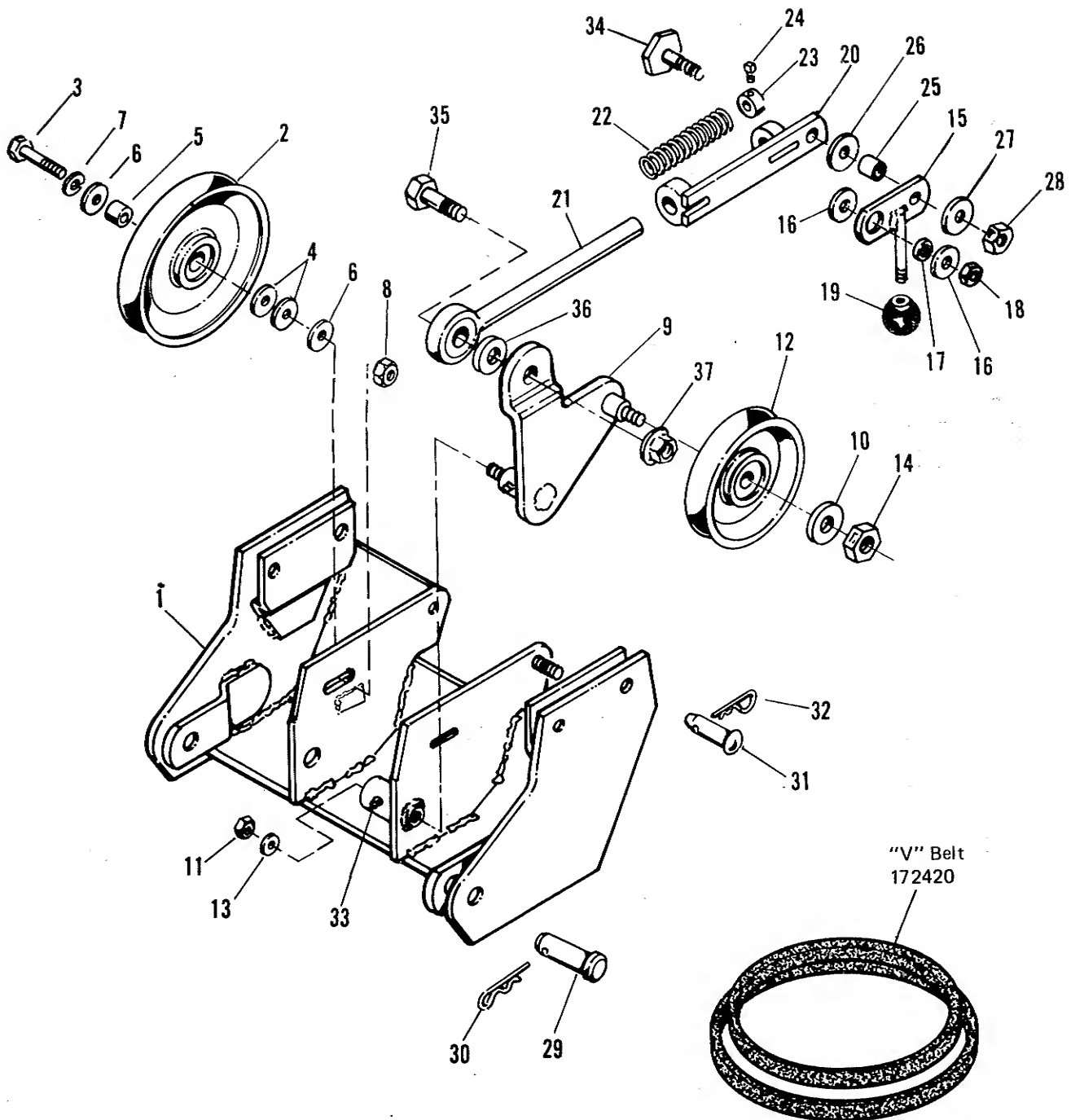
SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE



Simplicity[®]

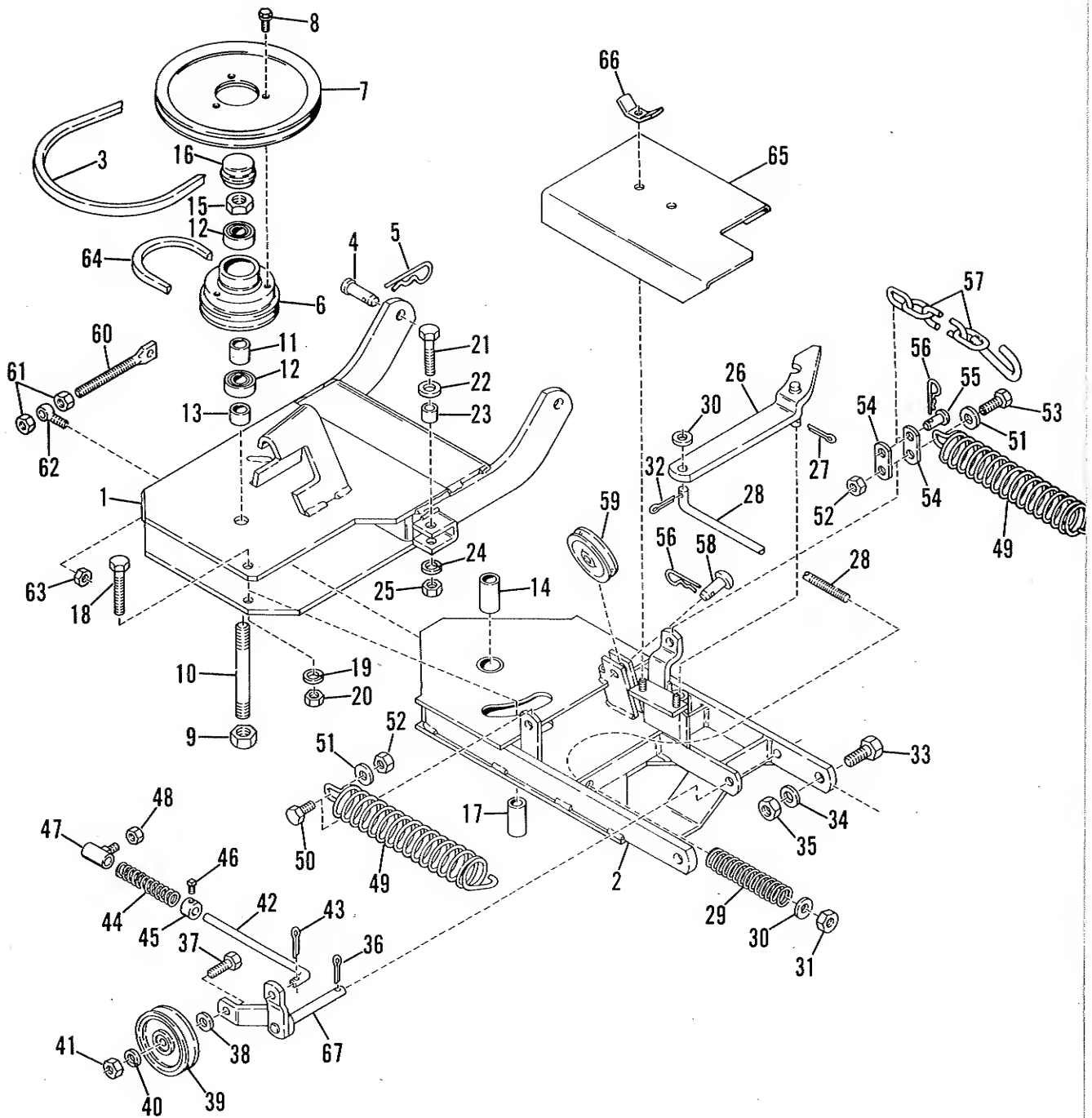
MFG. NO. 707 57" SICKLE BAR
MFG. NO. 944 HITCH ASSEMBLY
PARTS CATALOG

MFG. NO. 944 HITCH ASSEMBLY



Ref. No.	Part No.	Qty. Req.	Description
1	177010	1	Support Assembly
2	171641	1	Pulley
3	715143	1	Hex Capscrew, 3/8-24 x 1-3/4"
4	719002	3	Plain Washer, 5/16
5	170291	1	Spacer
6	153052	2	Washer
7	720002	1	Lock Washer, 3/8
8	174435	1	Special Nut, Flange
9	177014	1	Lever Assembly
10	719002	1	Plain Washer, 5/16
11	717510	1	Hex Nut Lock, 3/8-16
12	171640	1	Pulley
13	154325	1	Washer
14	717521	1	Hex Nut Centerlock, 1/2-13
15	171624	1	Lever Assembly
16	719001	2	Plain Washer, 3/8
17	154177	1	Spacer
18	717524	1	Jam Nut, 3/8-16
19	122005	1	Knob
20	177004	1	Rod Guide Assembly
21	177204	1	Eye Bolt
22	163103	1	Spring
23	105201	1	Set Collar
24	713001	1	Set Screw, 1/4-20 x 3/8
25	153081	1	Spacer
26	159134	1	Special Washer
27	719001	1	Plain Washer, 3/8
28	717510	1	Hex Nut, Full Lock, 3/8-16
29	112052	2	Yoke Pin
30	176012	2	Safety Spring Clip
31	102004	4	Pivot Pin
32	106788	4	Hair Pin Clip
33	727013	1	Grease Fitting
34	108418	1	Screw
35	108412	1	Shoulder Bolt
36	719004	1	Washer Plain, 1/2
37	718035	1	Nut Flange, 3/8-16

HITCH ASSEMBLY



SEE LAST PAGE FOR
ASSEMBLED VIEW

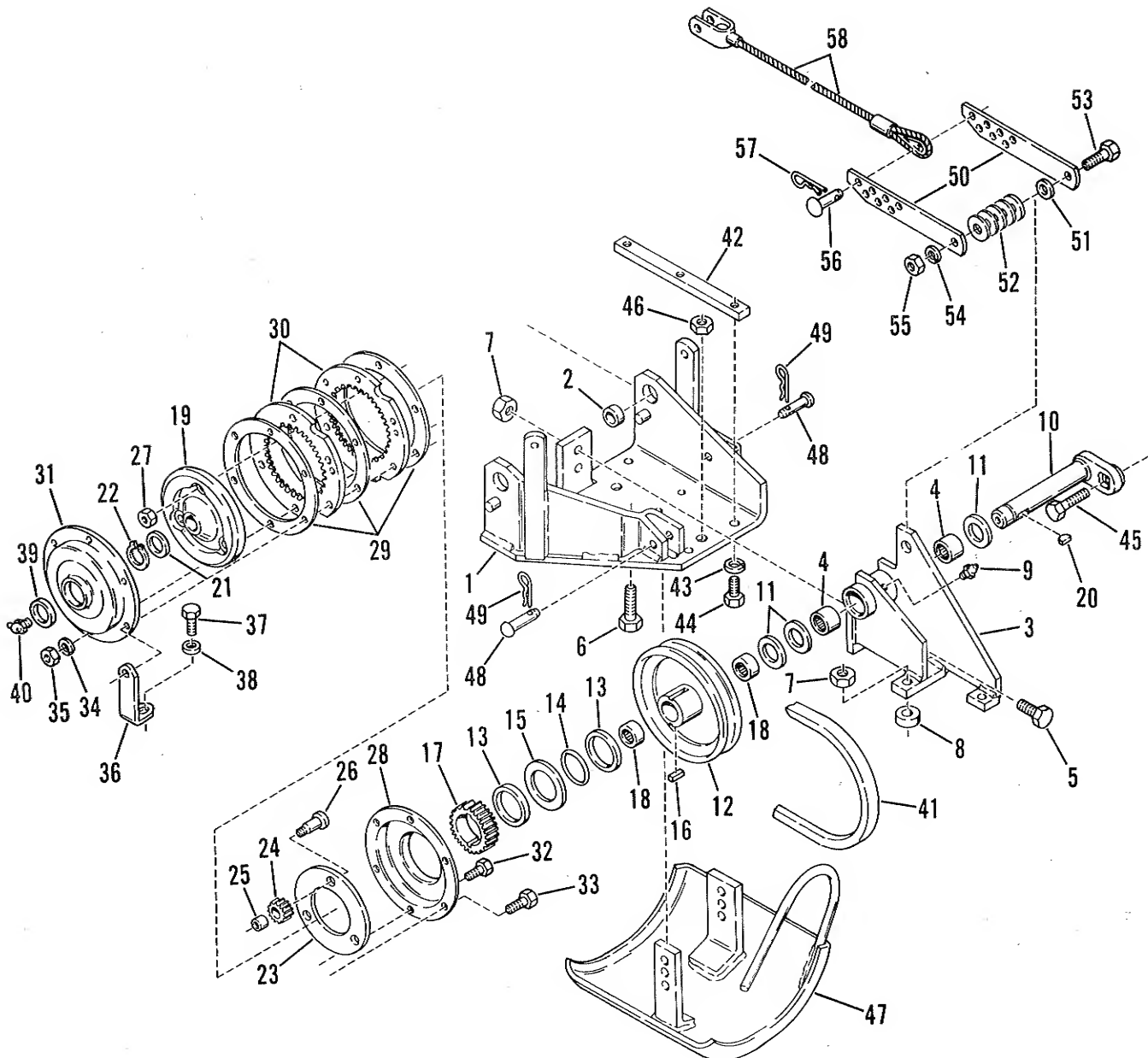
HITCH ASSEMBLY

Ref. No.	Part No.	Qty. Req.	Description
1	173470	1	Support Assembly
2	173650	1	Side Frame Assembly
3	174440	1	"V" Belt
4	112052	2	Yoke Pin
5	106788	2	Spring Clip
6	173525	1	Pulley
7	173607	1	Pulley
8	715155	3	Hex Washer Head Screw, 5/16" - 18 x 5/8"
9	717030	1	Nut, 3/4" - 10
10	174742	1	Rod
11	173101	1	Spacer
12	108202	2	Ball Bearing
13	173100	1	Spacer
14	173019	1	Spacer
15	717536	1	Center Lock Nut
16	154487	1	Hub Cap
17	173097	1	Spacer
18	715108	1	Hex Head Capscrew
19	720004	1	Lockwasher, 1/2"
20	717006	1	Full Hex Nut, 1/2" - 13
21	705048	1	Hex Head Capscrew
22	719003	1	Plain Washer, 7/16"
23	173099	1	Spacer
24	720004	1	Lockwasher, 1/2"
25	717006	1	Full Hex Nut, 1/2" - 13
26	173580	1	Latch Assembly
27	722006	1	Cotter Pin, 1/8" x 1"
28	173657	1	Rod
29	173658	1	Spring
30	719006	2	Plain Washer, 1/4"
31	717511	1	Full Hex Lock Nut, 5/16" - 18
32	722016	1	Cotter Pin, 3/32" x 5/8"
33	715156	2	Screw
34	119018	2	Washer
35	717520	2	Lock Jam Nut
36	722006	1	Cotter Pin, 1/8" x 1"

Ref. No.	Part No.	Qty. Req.	Description
37	705016	1	Hex Head Capscrew, 3/8" - 16 x 1-1/4"
38	719001	1	Plain Washer, 3/8"
39	106716	1	Idler Pulley
40	720002	1	Lockwasher, 3/8"
41	717003	1	Full Hex Nut, 3/8" - 16
42	174207	1	Rod
43	722016	1	Cotter Pin, 3/32" x 5/8"
44	8191045	1	Spring
45	8191022	1	Set Collar
46	713001	1	Sq. Head Set Screw, 1/4" - 20 x 3/8"
47	164094	1	Rod Guide Assembly
48	717511	1	Full Hex Lock Nut, 5/16" - 18
49	101126	2	Tension Spring
50	705005	1	Hex Head Capscrew, 3/8" - 16 x 1"
51	719002	2	Plain Washer
52	717510	2	Full Hex Lock Nut, 3/8" - 16
53	705016	1	Hex Head Capscrew, 3/8" - 16 x 1-1/4"
54	108199	2	Link
55	153058	1	Pin
56	106788	2	Spring Clip
57	174209	1	Chain Assembly
58	102004	1	Pivot Pin
59	101115	1	Pulley
60	174743	1	Bolt Assembly
61	717510	2	Full Hex Lock Nut
62	174211	1	Eyebolt
63	717515	1	Full Hex Lock Nut
64	173948	1	"V" Belt
65	174316	1	Cover
66	106229	1	Wing Nut
67	174187	1	Lever Assembly

NOTE: 174741 BOLT ASSEMBLY
(INCLUDES REF. NO. 9 AND 10)

DRIVE ASSEMBLY



SEE LAST PAGE FOR
ASSEMBLED VIEW

DRIVE ASSEMBLY

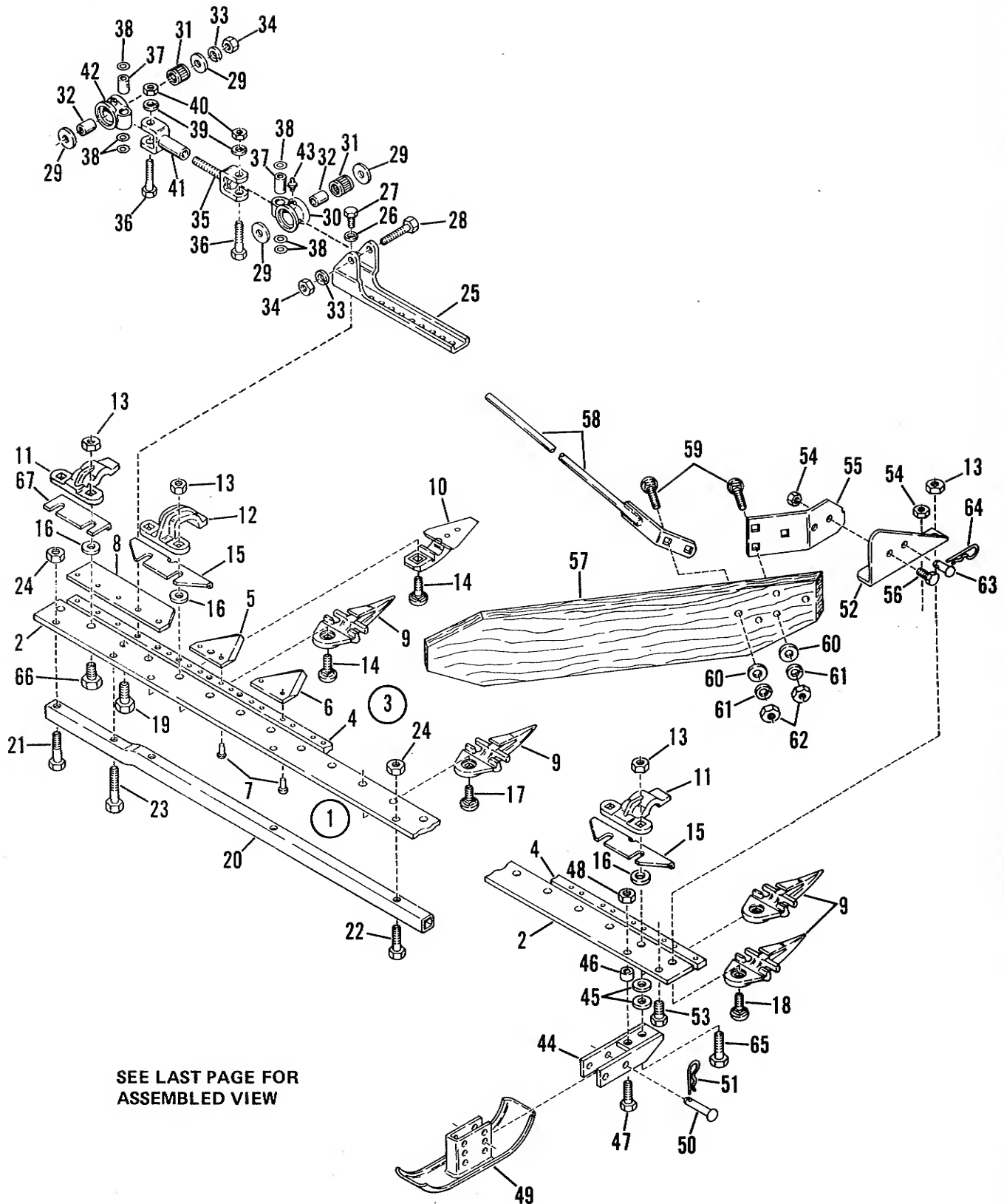
Ref. No.	Part No.	Qty. Req.	Description
1	174184	1	Mounting Plate Assembly
2	173664	2	Spacer
3	174150	1	Bearing Housing
4	173739	2	Bearings
5	715092	2	Hex Head Capscrew, 7/16" - 14 x 1-1/4"
6	715054	1	Hex Head Capscrew
7	717519	3	Full Hex Lock Nut, 7/16" - 14
8	174119	1	Spacer
9	727002	1	Grease Fitting
10	174193	1	Crankshaft
11	173140	3	Washer
12	173557	1	Hub and Pulley
13	161037	2	Washer
14	157326	1	Ring
15	161075	1	Seal
16	173570	2	Key
17	173553	1	Sun Gear
18	173738	2	Bearing
19	173542	1	Spider Hub
20	725003	2	Woodruff Key, No. 9
21	173668	1	Washer
22	8051040	1	Retaining Ring
23	157333	1	Ring, Bolt
24	157335	3	Pinion
25	157337	3	Needle Bearing
26	157336	3	Pinion Pin
27	717511	3	Full Hex Lock Nut, 5/16" - 18
28	161054	1	Left Hand Cover
29	161129	3	Gasket
30	157382	2	Ring Gear
31	173550	1	Cover

Ref. No.	Part No.	Qty. Req.	Description
32	715048	5	Hex Capscrew, 5/16" - 18 x 3/4"
33	715073	1	Hex Capscrew, 5/16" - 18 x 7/8"
34	720001	7	Lockwasher, 5/16"
35	717001	7	Hex Full Nut, 5/16" - 18
36	174517	1	Bracket
37	715121	1	Hex Capscrew, 5/16" - 18 x 1"
38	719006	1	Plain Washer, 1/4"
39	118118	1	Oil Seal
40	727004	1	Grease Fitting
41	173948	1	"V" Belt
42	173632	1	Spacer Bar
43	720001	3	Lockwasher, 5/16"
44	715073	3	Hex Head Capscrew, 5/16" - 18 x 7/8"
45	715149	1	Hex Head Capscrew
46	717519	1	Full Hex Lock Nut
47	174178	1	Shoe Assembly
48	156306	2	Pin
49	106788	2	Spring Clip
50	174238	2	Bracket
51	121163	1	Pinion Spacer
52	156089	5	Washer
53	715099	1	Hex Head Screw, 3/8" - 16 x 1-1/2"
54	720002	1	Lockwasher, 3/8"
55	717003	1	Full Hex Nut, 3/8" - 16
56	8271015	1	Pin
57	106787	1	Spring Clip
58	174235	1	Cable Assembly

OTE: 173667 HOUSING w/BEARINGS
(INCLUDES REF. NO. 3 AND 4)

173556 PULLEY AND HUB ASSEMBLY
(INCLUDES REF. NO. 12 THRU 18)

SICKLE ASSEMBLY



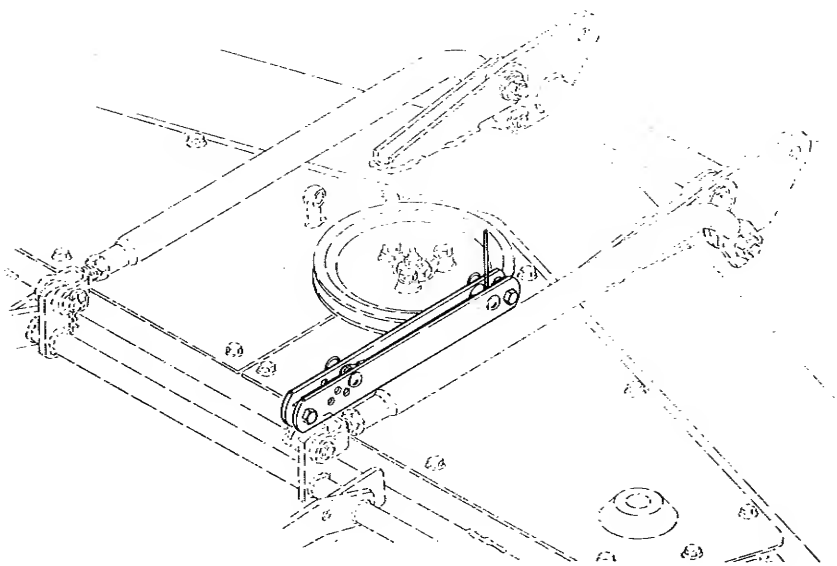
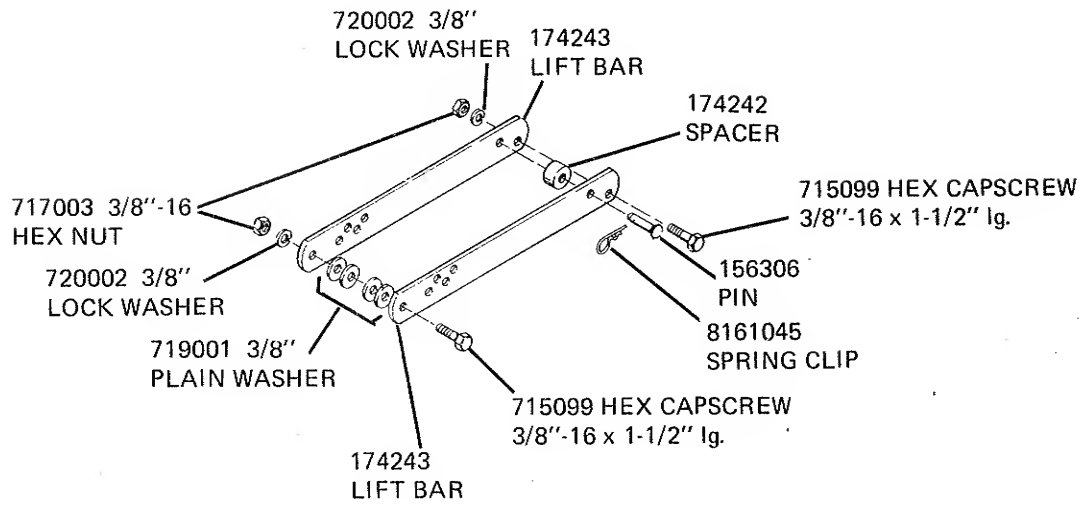
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SICKLE ASSEMBLY

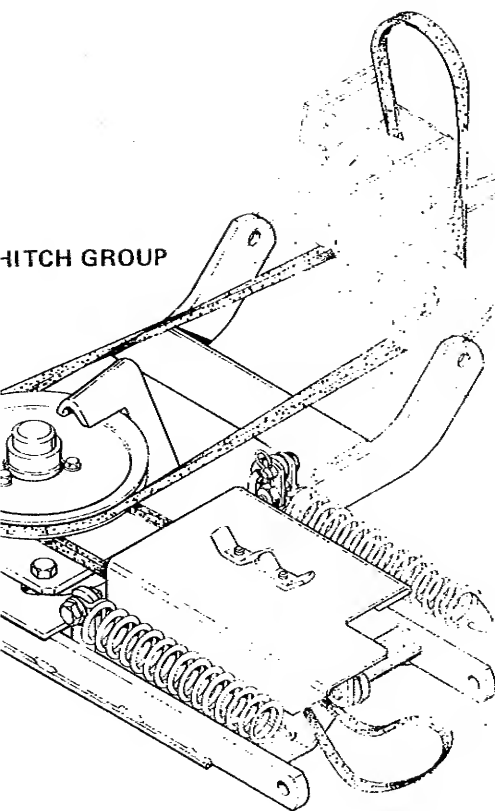
Ref. No.	Part No.	Qty. Req.	Description
1	174216	1	Cutter Bar Assembly (Incl. Ref. Nos. 2 thru 18)
2	174188	1	Bar Cutter
3	174201	1	Blade Assembly (Incl. Ref. Nos. 4 thru 8)
4	174202	1	Bar
5	174203	3	Knife Section
6	174535	16	Knife Section
7	724701	42	Rivet
8	173559	1	Filler Bar
9	174536	19	Guard
10	174541	1	Shear Finger Assembly
11	174537	5	Bar Clip
12	174538	1	Bar Clip
13	717519	22	Full Hex Lock Nut, 7/16" - 14
14	702019	9	Carriage Bolt, 7/16" - 14 x 1-1/2"
15	174539	5	Wear Plate
16	174540	12	Plain Washer
17	702025	9	Carriage Bolt, 7/16" - 14 x 1"
18	702028	1	Carriage Bolt
19	715092	1	Hex Head Capscrew, 7/16" - 14 x 1-1/4"
20	174183	1	Tube
21	715036	1	Hex Head Capscrew, 3/8" - 16 x 2-1/4"
22	705010	3	Hex Head Capscrew, 3/8" - 16 x 1-3/4"
23	715160	1	Hex Head Capscrew, 3/8" - 16 x 2-3/4"
24	717510	5	Full Hex Lock Nut, 3/8" - 16
25	174191	1	Sickle Head
26	720001	5	Lockwasher, 5/16"
27	715088	5	Hex Head Capscrew, 5/16" - 24 x 3/4"
28	715149	1	Hex Head Capscrew
29	173141	4	Washer
30	8161196	1	Pitman Bearing Housing
31	8161198	2	Needle Bearing

Ref. No.	Part No.	Qty. Req.	Description
32	173177	2	Spacer
33	720006	2	Lockwasher, 7/16"
34	717022	2	Full Hex Nut, 7/16" - 14
35	173530	1	Clevis Assembly
36	715161	2	Hex Head Capscrew, 3/8" - 16 x 2-1/4"
37	8161056	2	Bearing Pivot Block
38	101025	6	Washer
39	720002	2	Lockwasher, 3/8"
40	717003	2	Full Hex Nut, 3/8" - 16
41	173529	1	Clevis Assembly
42	174322	1	Pitman Bearing Housing
43	727002	4	Grease Fitting
44	174194	1	Support Assembly
45	719001	2	Plain Washer, 3/8"
46	174206	1	Spacer
47	705009	1	Hex Head Capscrew, 3/8" - 16 x 1-1/2"
48	717510	1	Full Hex Lock Nut, 3/8" - 16
49	174181	1	Shoe Assembly
50	105249	2	Pin
51	106787	2	Spring Clip
52	174393	1	Bracket
53	705005	1	Hex Head Capscrew, 3/8" - 16 x 1"
54	717510	2	Full Hex Lock Nut, 3/8" - 16
55	174557	1	Divider Board Support
56	108766	1	Shoulder Bolt
57	101078	1	Divider Board
58	101079	1	Divider Rod Assembly
59	702005	5	Carriage Bolt, 3/8" - 16 x 1-1/2"
60	719001	5	Plain Washer, 3/8"
61	720002	5	Lockwasher, 3/8"
62	717003	5	Full Hex Nut, 3/8" - 16
63	153058	1	Pin
64	106787	1	Spring Clip
65	705064	1	Hex Head Capscrew
66	715080	2	Hex Head Capscrew
67	174368	1	Wear Plate

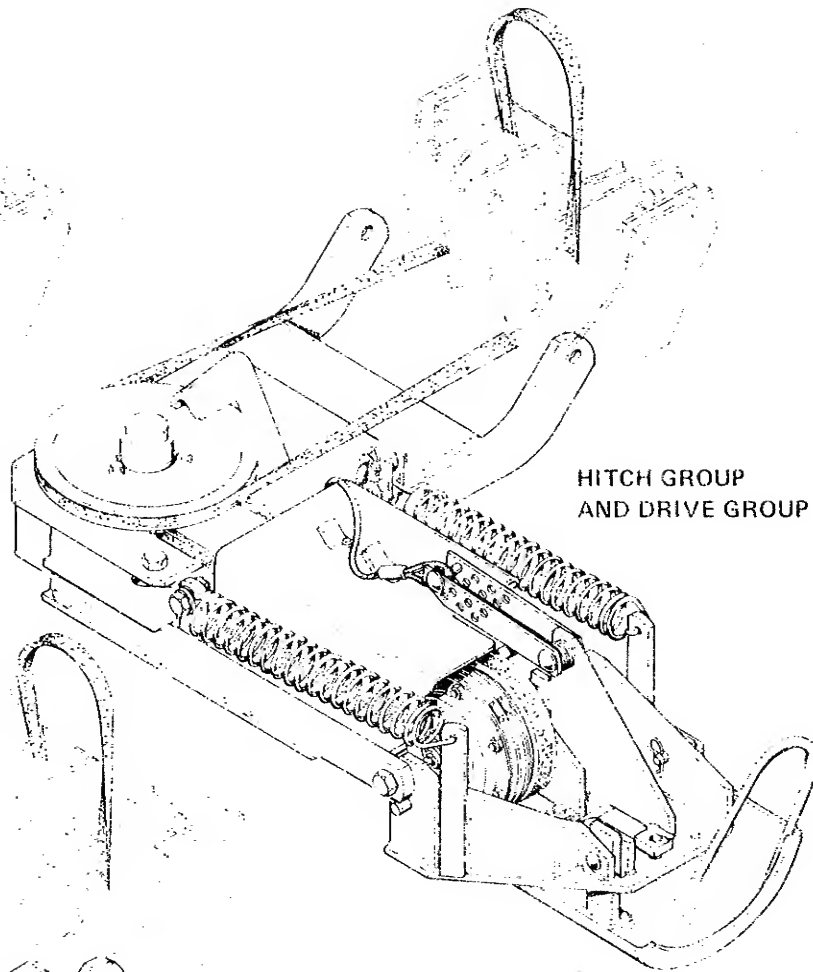
NOTE: THESE PARTS ARE FOR
RE-ATTACHMENT OF 60"
ROTARY MOWER



HITCH GROUP



HITCH GROUP
AND DRIVE GROUP



HITCH, DRIVE AND
SICKLE GROUPS

